

LEVEL *news*

Great Lakes - St. Lawrence River Water Levels



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Seasonal Decline in Levels Stalls during November

Periods of mild temperatures, rain, and high winds were experienced throughout much of the Great Lakes basin during November. The month ended with a return to cold, windy weather bringing lake-effect snow to traditional snow belt areas.

Rainfall received during the month helped slow, and in the cases of lakes Michigan-Huron and Ontario reverse, the seasonal decline in the water levels on the Great Lakes. While, water levels on lakes Superior, St. Clair and Erie declined less than expected from October to November, levels on lakes

Michigan-Huron and Ontario increased slightly instead of continuing to decline as they usually do at this time of year.

Rainfall combined with a reduction in evaporation due to the mild temperatures resulted in near-record high water supplies to Lakes Michigan-Huron for the month of November. As a result, daily water levels on these lakes increased 7 cm during November. Because water levels decline about 5 cm on average during November, the net result is that water levels moved 12 cm closer to average

conditions during the month. At the beginning of December water levels on Lakes Michigan-Huron were 48 cm below average.

LEVEL*news* readers will recall that at the beginning of November these lakes were 60 cm below average. Although the lakes remain well below average, the improvement relative to average conditions is good to see.

Wind Effects

Autumn often brings storms packing high winds to the Great Lakes region. When strong, sustained winds (continued on next page)

Great Lakes Water Level Information

Lake	November 2003 Monthly Mean Level		Beginning of December 2003 Level	
	Compared to Monthly Average (1918-2002)	Compared to One Year Ago	Compared to Beginning-of-Month Average (1918-2002)	Compared to One Year Ago
Superior	26 cm below	13 cm below	22 cm below	9 cm below
Michigan-Huron	53 cm below	12 cm below	48 cm below	5 cm below
St. Clair	27 cm below	6 cm below	21 cm below	3 cm above
Erie	13 cm below	2 cm above	12 cm below	6 cm above
Ontario	11 cm above	28 cm above	17 cm above	36 cm above



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prevail in one direction over a lake, water levels can rise (set-up) or fall (set-down) significantly in a short period of time. The plots provided show hourly water heights in metres above Chart Datum at two water level gauging stations on Lake Erie. The short-term impact of high winds out of the west on water levels is demonstrated. During three significant November wind events, levels increased rapidly at Port Colborne located at the eastern end of the lake. At the same time, levels fell sharply at Bar Point located at the western end of the lake. Data is unavailable at Bar Point for a few hours on November 13th when levels dropped below the intake for the gauge's stilling well.

Hourly data at Great Lakes water level gauging stations operated by the Canadian

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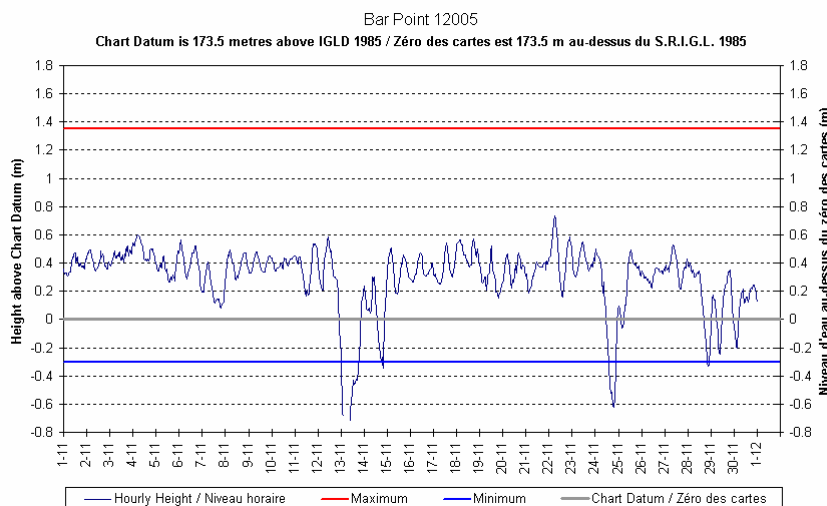
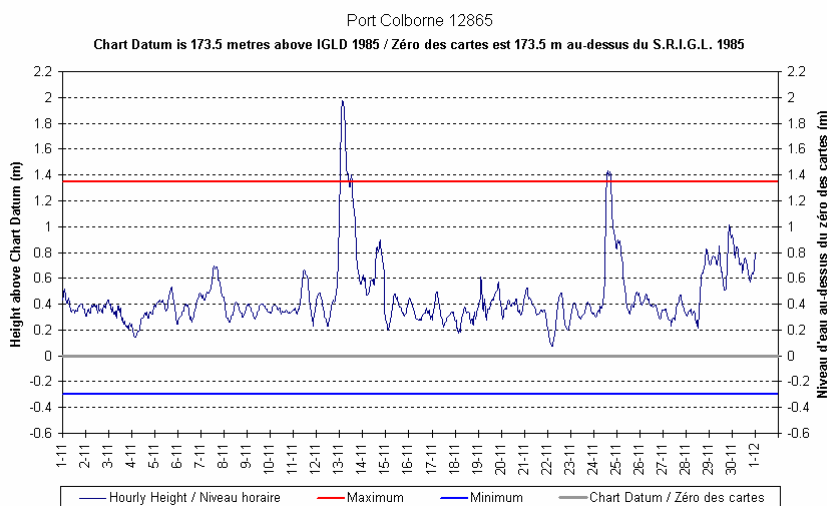
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November Precipitation over the Great Lakes As a percentage of the long-term November average:

Great Lakes Basin	134%	Lake Erie	117%
Lake Superior	81%	(including Lake St. Clair)	
Lakes Michigan-Huron	164%	Lake Ontario	146%

NOTE: These figures are preliminary

Hydrographic Service can be found at their website:
http://chswwww.bur.dfo.ca/danp/tidal_e.html



November Outflows From the Great Lakes As a percentage of the long-term November average:

Lake Superior	78%	Lake Erie	95%
Lake Huron	86%	Lake Ontario	101%

NOTE: These figures are preliminary